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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/687,445
Filing Date: October 13, 2000
Appellant(s): ASPLIN, CHARLES LEE

James Larson
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 5/20/2009 appealing from the Office action mailed 3/17/2009.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows: Claims 19-21, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flock, '914 in view of Asplin '763 and Lightle '108 as put forth with respect to claim 17 above, and further in view of Poulter US 1,915,032.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,860,763	Asplin	01-1999

5,795,108	Lightle	08-1998
1943914	Flock	01-1934
1,915,032	Poulter	06-1933
5,561,914	Asplin	10-1996

(9) Grounds of Rejection

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 12-18, 22, 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flock # 1,943,914 in view of Asplin # 5,860,763 and Lightle # 5,795,108.

Flock discloses a method of lifting and leveling a slab of concrete (6) using compressed air to compact the sunken soil (5) below the slab (6), and to lift the slab, to stabilize and hold said slab in a desired position, the method comprising the steps of:

Drilling a hole in said slab (6).

Attaching said gun nozzle (13) to said slab, and at least partially within said drilled hole.

Supplying an aggregate storage tank (not shown) filled with an aggregate, such as earth clay etc., said storage tank being connected to an injector gun (13) via an elongate fluid tight hose (9). See Col. 2, lns. 100-110.

Supplying a pressure source in fluid tight connection with said aggregate storage tank such that an aggregate is discharged under pressure to compact the subsoil and raise the sunken pavement (6). See Col. 2, lns. 88-110.

Delivering said pressurized aggregate, to said injector gun (19) and through a nozzle (13); and into a cavity created below the sunken slab (6). See Col. 3, lns. 19-44.

Lifting said slab (6), momentarily, with said pressurized earth; to height at least equal to a desired final level with the inherent internal pressure of said pressurized earth, such that "a settle cavity is formed, and back pressure is applied to the bottom surface of said slab (6) to raise said slab". See Col. 2, lns. 19-33.

Leveling said ground with said pressurized earth, such that said earth may move about said settle cavity and fill said cavity, thus supporting the bottom surface of said slab (6).

Flock further discloses the "stem 9" could take the form of a well drilling rig, which obviously would be attached to the slab, else the drilling rig would not be able to drill the Hole (11) as described. See col. 2, lns. 88-105.

What Flock does not disclose is the specific use of well dried mason's sand. However, Asplin teaches well dried mason's sand is advantageously used to fill a cavity below sunken pavement slabs (52), by compressed air injection, utilizing an injector gun (42). See Col. 4.

The sand being provided in a drying/storage hopper having a shutoff valve, to control the flow of sand. Col. 2, lns. 13-36.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to provide the method of raising sunken pavement, of Flock, with

the step of utilizing mason's sand under high air pressure, to fill a cavity formed below sunken pavement, as taught by Asplin, in order to form a compressed foundation layer of aggregate, to support said slab in a raised, level position.

Flock in view of Asplin disclose essentially all that is claimed, to include the use of a hopper (32) and various valve assemblies (34, 30, 32, 56) to control movement and placement of the pressurized aggregate, such as earth.

Although Flock further discloses the steps of drilling at least one hole (11) and filling said hole with pressurized aggregate until the pavement is leveled.

Flock does not disclose patching the hole (11) with cement or the like.

However, it would be obvious to one of ordinary skill in the art that Flock contemplates patching the holes, otherwise, rain water would enter the hole (11) and cause subsequent settling of the concrete slab just raised.

Flock also discloses the injector gun can be any of several different embodiments having different shapes, sizes and nozzle openings can be disposed in various orientations, relative to the supply hose (9). To include a well drilling rig disposed upon the slab (6) being raised.

Flock in view of Asplin do not disclose are the various structural features of the pressurized delivery system. However, Lightle teaches the steps of:

Providing a high-volume, compressed air source and plurality of valve assemblies (30, 32, 56) for controlling the flow of sand through the distribution systems.

Said valve assemblies increasing the safety of pressurized system, and providing sufficient pressure for placing aggregate in a desired location, through an aggregate distribution system. See Lightle Cols. 2-3. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to provide the method of lifting and leveling a slab, of Flock in view of Asplin, with the step of providing a high-volume, compressed air source, having a pressure relief valve as taught by Lightle, since it is known to place dry sand in a desired location, by providing a sand gun, with compressed air, as taught by both Asplin and Lightle.

With respect to claim 24 although the cited references do not explicitly recite the step of patching the holes in the concrete, it is obvious, such a step is absolutely mandatory, to prevent: Pedestrians being hurt by stepping into un-patched holes; rain water entering the holes and causing subsequent settling of the raised and leveled slab.

Claims 19-21, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flock, '914 in view of Asplin '763 and Lightle '108 as put forth with respect to claim 17 above, and further in view of Poulter US 1,915,032.

The combination of references cited above, discloses essentially all that is claimed, except for drilling a 2nd hole through the concrete slab and repeating the raising/leveling steps. However Poutler teaches it is known multiple holes (3) may have to be drilled through a concrete slab (1) in order to inject sufficient amounts of filler material, in order to raise the concrete slab. See figs. 2, 3; Col. 2.3

With respect to claim 20 although the cited references do not explicitly recite the step of patching the holes in the concrete, it is obvious, such a step is absolutely mandatory, to prevent: Pedestrians being hurt by stepping into un-patched holes; rain water entering the holes and causing subsequent settling of the raised and leveled slab.

Claims 12, 17, 18, 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flock # 1,943,914 in view of Asplin US 5,561,914.

Flock discloses a method of lifting and leveling a concrete slab (6) comprising the steps of:

Supplying a particulate storage tank (not shown) having an incompressible filler material, such as earth clay etc.

Drilling a hole (11) in the slab to be leveled.

Attaching a gun nozzle (13) to said drilled hole (11), via a guide sleeve (18) to said hole.

Pressurizing the filler material.

Delivering the pressurized filler material through said hole and into the cavity (12).

Leveling said ground with said filler material carried by said pressure source, such that the filler material may move freely within said settle cavity (12), thereby filling said cavity.

Wherein the slab (6) is raised to a height at least as high as a desired final position.

Although Flock does not explicitly recite the step of injecting the filler material in "bursts"

it would be well within the skill of one in the art, and quite obvious, that if after a 1st injection of filler material, the slab (6) is not raised to at least the desired final position, repeated injections of filler material would be necessary to raise the slab (6) to its final desired position.

Although Flock does not explicitly recite the use of "Mason's sand"; it is obvious the disclosure of Flock citing "earth, clay etc.) would include sand. Flock further does not disclose how the filler material (i.e. earth, clay etc.) is pressurized; Asplin teaches "Dry sand is a frequent requirement in various aspects of the construction industry. One use for dry sand is in the mixing of certain dry premix mortars and cements.
A second use for dry sand is the use of sand blasters wherein dry sand is mixed with air at high pressure and used for a variety of situations".
Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to provide the method of raising and leveling a sunken concrete slab of Flock, with the step of providing masonry sand, under high air pressure, as taught by Asplin, since both references teach ejecting earthen, filler materials under pressure, in the construction industry. See Asplin Col. 1.

Claims 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flock '914 and Asplin '914 as applied to claim 18 above, and further in view of Poulter US 1,915,032. The combination of references cited above, discloses essentially all that is claimed, except for drilling a 2nd hole through the concrete slab and repeating the

raising/leveling steps. However Poutler teaches it is known multiple holes (3) may have to be drilled through a concrete slab (1) in order to inject sufficient amounts of filler material, in order to raise the concrete slab. See figs. 2, 3; Col. 2.3

With respect to claims 20, 24 although the cited references do not explicitly recite the step of patching the holes in the concrete, Poulter teaches the use of "plugs" (5) to cap the holes in the slab. Further, it is obvious, such a step is absolutely mandatory, to prevent: Pedestrians being hurt by stepping into un-patched holes; rain water entering the holes and causing subsequent settling of the raised and leveled slab.

(10) Response to Argument

On page 11 of Appellant's brief, it is argued "Flock, Asplin '763 and Lightle, individually or in combination do not teach or suggest lifting with compressed air to create a settle cavity between the slab and the ground (nor) leveling the ground with well dried mason's sand carried by the compressed air, and repeating the lifting and leveling steps until the slab is at the desired level".

However, the examiner does not concur.

As put forth above, Flock teaches it is known to raise sunken concrete slabs by injecting an earthen material, under pressure, to lift the slab into its proper or original position. See Col. 1, lns. 22-26. Flock further teaches the steps of drilling a hole in the pavement. Flock discloses the dynamics of the process as follows:

"This particular phase of the invention is carried out by pumping, tamping or otherwise forcing a sufficient quantity of loose or plastic material under the sagging structure…This is accomplished by drilling or cutting a hole in the pavement…and then forcing the filling material downward through the hole to react under pressure against the earth's subsoil and the lower surface of the pavement in a manner to raise the latter…the permanent subsoil of the earth serving as a cylinder for the reception of the substantially incompressible filling material".

Although Flock does not explicitly disclose the use of compressed air, the recitation of "pumping, tamping or otherwise forcing a sufficient quantity of loose...material" suggests the use of pressurized media.

Further, it should be noted Flock discloses using compressed air to run the tamper embodiment disclosed in Col. 4, lns. 87-95. Hence, it would be obvious Flock contemplates the use of compressed air in the recitation of "pumping, tamping or otherwise forcing". See Col. 1, lns. 22-26.

Flock further discloses providing a supply of filling material "earth, clay, etc. in fact any substance which can be forced into position and which can thereafter become substantially incompressible should be found satisfactory". This disclosure is seen to include sand, in general, if not mason's sand. Since Flock clearly discloses the use of a hopper (32) in one embodiment, common sense would suggest, Flock provides a storage tank/hopper for each embodiment.

Flock also discloses in Col. 3, lns. 19-44, When the material is first discharged from the pilot 13 it will first fill up any subterranean cavities or fissures and will then cause the surrounding earth to become compacted. When the surrounding earth has reached a substantially incompressible state, it will react against the subsoil and transmit the filling pressures to the lower side of the pavement...each force has a vertical lifting component tending to raise the sunken section".

Obviously if there are no cavities or fissures to be filled, the pressurized material will directly act to raise the sunken pavement, thereby forming a "settle cavity" as required in the claims.

Flock further discloses "the material will, of course be pumped into the earth until the pavement has reached its horizontal dotted line position (Fig. 1). Although Flock does not explicitly disclose this is performed by a plurality of "bursts"; common sense would suggest, one of skill in the art, would not regularly raise the sunken pavement in one "burst" to the degree of accuracy required for pedestrian safety. And that upon a first application "burst" one of skill would look or measure the height of the raised pavement and decide whether or not a second application "burst" is necessary.

As put forth above, Flock does not explicitly recite the use of "well dried mason's sand" nor the explicit use of compressed air to raise the sunken pavement.

However, Asplin '763 (Applicant's prior patent), teaches well dried mason's sand is advantageously used to fill a cavity below sunken pavement slabs (52) by compressed

air injection as follows "The raising of the slab then creates a fill area (44) between the damaged sidewalk slab (50) and the ground 46 by use of a sandblaster wand (40). The mason's sand creates a stable foundation free of air voids that will resist settling and thus prolong the useful life of the damaged sidewalk slab (50)". See Fig. 6; Col. 4, lns. 25-42.

Hence, since Flock clearly discloses the use of any earthen material that can be forced under pressure and form an incompressible support surface should be satisfactory, and Asplin's teaching of forcing mason's sand under sunken concrete using compressed air, it would be obvious to one of ordinary skill in the art, at the time the invention was made to use mason's sand, under pressure to raise sunken concrete slabs.

Finally, although both Flock and Asplin disclose forcing earthen filling material under a sunken concrete slab the filling material being under pressure, Appellant insists, it would not be obvious to one of skill in the art, that said pressurized delivery system, such as a sand blaster, would include a storage tank having a sand outlet, a air/sand mixing chamber nor an injector gun having a gun nozzle attached to a fluid tight hose.

Hence, Lightle was introduced to show the common components of a pressurized sand delivery system. To that affect, Lightle teaches a method of placing a granular material, such as sand includes loading sand into a hopper for feeding a sand gun, and directing compressed air into the sand gun and into an elongated flexible hose

to thereby direct the sand into the sand gun through the flexible hose.
Lightle explicitly recites "Granular materials, such as sand and gravel of different sizes are frequently conveyed through a hose by being entrained in an airstream. Such transmission of granular material is found in concrete construction where a mixture of sand and cement is pumped dry through a hose to a nozzle where it is positioned at a remote location with the nozzle". Col. 1, lns. 9-16.

The fact Lightle suggests water, may optionally be added, is not seen as relevant since the use of water is optional and added after the air and sand are mixed. Therefore, the method claimed, in claims 12-18, 22, 24-29 appear obvious to the teaching of Flock in view of Asplin. Further, it would be obvious to use a device, such as that taught by Lightle to supply the compressed air and sand to the sand gun for distribution thereof, as desired.

Further, it is noted that the method appears to be able to be performed no matter what device is used, as long as sand is mixed with compressed air, as is known in the art of sand blasters and the like.
Therefore, the arguments are not persuasive and the rejection is maintained.

On page 14 of Appellant's Brief, Appellant argues against the rejection of claims 13 and 14 by suggesting "Flock and Asplin '763 do not disclose a bleed valve. Lightle is relied upon to teach a compressed air source and a plurality of valve assemblies (30, 32) for

controlling the flow of compressed air. However, none of the valve assemblies (30, 32) of Lightle is disclosed as a bleed valve...because none of the references teach a bleed valve, they cannot teach operating the bleed valve to release excess pressure as recited in claim 14".

However, the Examiner does not concur.

Use of a bleed valve does not materially affect the method being performed, and thus lacks criticality. Further, bleed valves are common safety features required on all compressed air devices. Still further, it is well known "bleed valves" are self-regulating, and need no actual user input to operate normally. It is well known bleed valves open when the pressure of the compressed air in the system/device reaches a certain level, thereby opening the valve.

Therefore the argument is not persuasive and the rejection is maintained.

With respect to claim 17 Appellant repeats the argument that neither Flock nor Asplin or Lightle teach lifting and leveling a slab by using compressed air to lift the slab and dried sand to stabilize and hold the slab in a desired position.

However, the Examiner does not concur.

As clearly put forth above, Flock explicitly recites "This particular phase of the invention is carried out by pumping, tamping or otherwise forcing a sufficient quantity of loose or plastic material under the sagging structure…This is accomplished by…forcing the filling

material downward through the hole to react under pressure against the earth's subsoil and the lower surface of the pavement in a manner to raise the latter…the permanent subsoil of the earth serving as a cylinder for the reception of the substantially incompressible filling material".

Clearly it is the pressure media and not the filling material that raises the pavement slab, contrary to Appellant's argument.

Although Appellant argues Flock does not disclose forming a "settle cavity" by lifting the slab off of the settled subsoil. Appellant relies on the illustration of Fig. 1 to attempt to persuade the Office Flock does not create a "settle cavity".

However, the Examiner does not concur.
The reference is not limited by what is illustrated in the figures, but only by what would be considered obvious to one of ordinary skill in the art, reading the prior art reference.

Rather, the formation of a "settle cavity" is a result of raising the sunken slab, which is clearly disclosed by Flock. Which states "the sunken portion of the pavement being movable under pressure...since the effective lower surface of the latter(slab) is of an area many times greater than that of a...stream of filling material, the pressure per square inch exerted by the (pressurized) stream need not be excessively or impracticably high as one might have believed".

Therefore, the argument is not persuasive and the rejection is maintained.

On page 15 of Appellant's Brief, it is argued the prior art do not teach specific structure of the mixing chamber, with respect to claims 17, 22.

However, since the structure of the pressurized device does not materially affect the manner in which the method is performed, the difference, if any, does not appear patentable. Further, Lightle teaches the structure and function of a typical "sand blaster" used to pressurize and distribute sand through a hose and "sand gun". The structure taught by Lightle is clearly capable of providing pressurized sand, in a manner consistent with the method claimed, even if minor structural difference exist between the two devices, which are, as put forth above, not material to the performance of the method of raising a sunken concrete slab.

Lightle explicitly recites "Granular materials, such as sand and gravel of different sizes are frequently conveyed through a hose by being entrained in an airstream. Such transmission of granular material is found in concrete construction where a mixture of sand and cement is pumped dry through a hose to a nozzle where it is positioned at a remote location with the nozzle". Col. 1, lns. 9-16.

On page 16 of the Appellant's brief, several arguments put forth against the references are repeated, and are answered in light of the column and line disclosures of the prior art put forth above.

Appellant does raise the argument that "flock does not disclose that there is an airtight seal between the stem 9/nozzle 17 and the hole".

However, Flock does recite "detachable pilot (13) secured thereto by any suitable joint, such, for example as a threaded connection (14)...The design of this pilot is subject to variation and a pilot of appropriate design is selected for each filling job...These variation will be determined by the character of the earth crust and subsoil, the manner in which the pavement has sunk or been fractured". See Col. 2, ln. 100-Col. 3, ln. 10. Further, Flock discloses "the stem may take the form of that of a well drilling outfit and hence be utilized to drill its own hole. The stem may be simply a conduit for carrying filling material under pressure and discharging it…under the sunken pavement".

Hence, it is obvious that in the form of a well drilling outfit, the stem (9) would in fact be capable of forming an air tight seal between the nozzle and the slab.

Appellant then argues the prior art does not "suggest introducing the compressed air and sand mixture in a 1st burst underneath the slab…the burst raises the slab upward…and the sand…of the burst partially fills the cavity...While Flock does disclose that material is forced under the slab, there is no disclosure that injected material is carried by or mixed with compressed air. Therefore, flock does not lift the slab with compressed air".

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

As put forth above, Flock clearly discloses "pumping, tamping or otherwise forcing…loose…material under the sagging structure to lift the latter into its proper or original position". Col. 1, lns. 22-40. Asplin teaches it is known to inject mason's sand under sunken sidewalk slabs using compressed air. Col. 4, lns. 25-42. Lightle teaches a method and apparatus for moving sand from a hopper to a sand gun, under pressure. See Abstract; Col. 1, lns. 9-15; Col. 1, ln. 60-Col. 2, ln. 1; Col. 2, lns. 44-59, emphasis on Col. 2, lns. 55-59.

Lightle explicitly recites "Granular materials, such as sand and gravel of different sizes are frequently conveyed through a hose by being entrained in an airstream. Such transmission of granular material is found in concrete construction where a mixture of sand and cement is pumped dry through a hose to a nozzle where it is positioned at a remote location with the nozzle". Col. 1, lns. 9-16.

Hence, it appears the actual method steps needed to be performed by the claims to raise the sunken pavement, as desired, are known and unpatentable over Flock in view of Asplin and Lightle.

With respect to claim 24 Appellant argues "Claim 24 recites patching the hole. This feature is rejected as being obvious because the rejection asserts that such a step is mandatory to prevent pedestrians being hurt and to prevent rainwater from entering the holes and causing settling of the slab...If the slab is on private property or in areas

where pedestrian traffic is not a concern, then the holes need not be patched...It is simply not true that the hole must be patched".

Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

In light of Appellant's argument the hole in the slab need not be patched, the patentable novelty of patching the hole is in question. In fact, the method step of patching the hole appears to be a matter of common sense, and not patentable at all.

Appellant argues in favor of claim 25-28, on pages 18-19 of the brief, by reiterating the notion the prior art does not introduce "a pressurized fluid media underneath the slab so that the introduced pressurized fluid media lifts the slab upward to form a cavity…and introducing dried material, different from the pressurized media into the cavity to at least partially fill the cavity".

However, the Examiner does not concur.

As put forth above Flock discloses "This particular phase of the invention is carried out by pumping, tamping or otherwise forcing a sufficient quantity of loose or plastic material under the sagging structure…This is accomplished by…forcing the filling material downward through the hole to react under pressure against the earth's subsoil

and the lower surface of the pavement in a manner to raise the latter…the permanent subsoil of the earth serving as a cylinder for the reception of the substantially incompressible filling material".

Clearly it is the pressure media and not the filling material that raises the pavement slab, contrary to Appellant's argument.

Flock further discloses the use of "earth, clay, etc. In fact any substance which can be forced into position and which can thereafter become substantially incompressible should be found satisfactory". Clearly lends itself to the use of dry sand. Further, Asplin teaches it is known to inject dried mason's sand, under pressure, under a concrete slab for filling the cavity under the slab and supporting the slab thereon. Lightle explicitly recites "Granular materials, such as sand and gravel of different sizes are frequently conveyed through a hose by being entrained in an airstream. Such transmission of granular material is found in concrete construction where a mixture of sand and cement is pumped dry through a hose to a nozzle where it is positioned at a remote location with the nozzle". Col. 1, lns. 9-16.

Hence, the argument is not persuasive and the rejection is maintained.

Appellant argues against the rejection of claim 29 by suggesting the prior art does not teach "that the pressurized fluid media is compressed air, and to use simultaneous injection of a mixture of compressed air and dried material".

However, the Examiner does not concur.

The claimed limitation should not be construed to imply separate and simultaneous injections of compressed air and dried material. The limitation, as disclosed in Appellant's Specification, is a mixture of air and sand, injected by the force of the compressed air exiting the sand gun.

As put forth above Flock discloses the use of "earth, clay, etc. In fact any substance which can be forced into position and which can thereafter become substantially incompressible should be found satisfactory". Clearly lends itself to the use of dry sand. Further, Asplin teaches it is known to inject dried mason's sand, under pressure, under a concrete slab for filling the cavity under the slab and supporting the slab thereon. Lightle teaches an apparatus and method for supplying compressed air and sand to a sand gun for distribution through a sand gun. And explicitly recites "Granular materials, such as sand and gravel of different sizes are frequently conveyed through a hose by being entrained in an airstream. Such transmission of granular material is found in concrete construction where a mixture of sand and cement is pumped dry through a hose to a nozzle where it is positioned at a remote location with the nozzle". Col. 1, lns. 9-16.

Hence, the argument is not persuasive and the rejection is maintained.

With respect to claim 20 Appellant argues on page 20 "Claim 20 recites patching the holes to match the slab. This feature is rejected as being obvious because the rejection

asserts that such a step is mandatory to prevent pedestrians being hurt and to prevent rainwater from entering the holes and causing settling of the slab...If the slab is on private property or in areas where pedestrian traffic is not a concern, then the holes need not be patched...It is simply not true that the hole must be patched".

Appellant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

In light of Appellant's argument the hole in the slab need not be patched, the patentable novelty of patching the hole is in question. In fact, the method step of patching the hole appears to be a matter of common sense, and not patentable at all.

Appellant then argues in favor of claim 21 with respect to the use of a bleed valve. However, as put forth above, the use of a bleed valve to prevent excessive pressure build-up within the compressed air system, does not materially affect the manner in which the concrete slab is raised, by forcing sand, under pressure beneath the concrete slab, thereby raising said slab.

Further, the use of a bleed valve in compressed air systems are routine safety devices found in most if not all compressed air systems.

Therefore, the patentable novelty of the claimed limitation is not agreed with.

Appellant argues against the rejection of claims 12, 17, 18, 25-29 as unpatentable over Flock and Asplin '914(Appellant's other prior patent) by suggesting the prior art does not "suggest a method of lifting and leveling a slab by using compressed air to lift eh slab and dried sand to stabilize and hold the slab in a desired position, as claimed". Appellant also argues "The assertion that 'earth or clay' disclosed by Flock inherently includes dried sand is without support' There is no indication whatsoever from Flock that the injected material should be dried, let along dried sand".

However, the Examiner does not concur.

Appellant's minimizing of Flock's disclosure, should not be permitted to limit the actual disclosure, which is recited below.

As put forth above Flock teaches it is known to raise sunken concrete slabs by injecting an earthen material, under pressure, to lift the slab into its proper or original position. See Col. 1, lns. 22-26. Flock further teaches the steps of drilling a hole in the pavement. Flock discloses the dynamics of the process as follows: "This particular phase of the invention is carried out by pumping, tamping or otherwise forcing a sufficient quantity of loose or plastic material under the sagging structure…This is accomplished by drilling or cutting a hole in the pavement…and then forcing the filling material downward through the hole to react under pressure against the earth's subsoil and the lower surface of the pavement in a manner to raise the latter…the permanent subsoil of the earth serving as a cylinder for the reception of the substantially incompressible filling material".

Although Flock does not explicitly disclose the use of compressed air, the recitation of "pumping, tamping or otherwise forcing a sufficient quantity of loose...material" suggests the use of pressurized media.

Further, it should be noted Flock discloses using compressed air to run the tamper embodiment disclosed in Col. 4, lns. 87-95. Hence, it would be obvious Flock contemplates the use of compressed air in the recitation of "pumping, tamping or otherwise forcing". See Col. 1, lns. 22-26.

Still further, Flock explicitly recites "earth, clay, etc. In fact any substance which can be forced into position and...become substantially incompressible should be found satisfactory". Since dry sand is a common roadway/sidewalk base material in which a roadway or sidewalk is directly applied onto a layer of dry sand, Flock's disclosure of "earth, clay, etc." would appear to suggest dry sand as well, since sand is a common building material.

In the final paragraph of page 22 of Appellant's brief it is argued "If a mixture of sand and compressed air were introduced through the stem (9) of Flock, the mixture would be introduced into the soil and there is no indication that the compressed air would in anyway raise the slab to create a cavity that is then filled by sand".

Appellant further argues "Instead, what would likely happen is that the compressed air would react against the subsoil (5) helping to compact it, with the sand filling any voids, until the vertical lifting forces of the soil start acting on the slab".

However the Examiner does not concur.

Soil does not have "vertical lifting forces". Else the Earth itself would explode! Earthen subsoil has mass, hence gravity, that compacts the soil into layers forming the crust of the Earth.

The only "vertical lifting forces" come from the pressure media used to inject the filling material.

Rather Flock clearly and undeniably recites "forcing the filling material downward through the hole to react under pressure against the earth's subsoil and the lower surface of the pavement in a manner to raise the latter". See Col. 1, lns. 30-45.

Hence, Appellant's conjecture and physics-defying logic should not be found persuasive. In light of the actual disclosure of Flock.

Appellant further repeats the previous argument that Flock does not teach supplying a storage tank filled with aggregate or supplying a pressure source in fluid tight connection with the storage tank.

Appellant further argues "Although Flock discloses that the fill material is injected under pressure, where the material comes from and how the pressure is created is simply not disclosed".

However, the Examiner does not concur.

Flock clearly discloses the use of a hopper (32), in one of several embodiments.

Hence, it would be common sense, Flock provides a hopper for all embodiments.
Further, Appellant's questioning of "how the pressure is created", is clearly contrary to the actual disclosure by Flock that "pumping, tamping or otherwise forcing a…loose…material, under the sagging structure to lift the latter into its proper or original position".
It is again noted Flock discloses the use of compressed air to operate the tamper embodiment, and thus would have knowledge of using compressed air mixed with "earth, clay, etc.". And that one of skill in the art, would find a sand blaster a common way of distributing sand, under pressure to a desired location.

With respect to claim 17, on page 23 of Appellant's brief, Appellant repeats previous arguments by incorporating by reference.
To that affect Flock discloses raising sunken concrete by pressurized injection of "earth, clay, etc…any substance that can be forced under pressure and become substantially incompressible should be found satisfactory".

Further, Asplin '914(Appellant's other prior patent) explicitly recites "Dry sand is a frequent requirement in various aspects of the construction industry…A second use for dry sand is the use of sand blasters wherein dry sand is mixed with air at high pressure and used for a variety of situations". See Col. 1, lns. 5-15.
Hence, since Flock discloses raising sunken concrete with "earth, clay, etc." under pressure, and Asplin teaches dry sand is a frequent requirement in various aspects of

the construction industry, including in the use of sand blasters; it appears one of skill in the art would find the method of raising sunken pavement, as claimed, obvious to the teachings of Flock in view of Asplin '914.

On page 24 of Appellant's brief Appellant argues against his prior patent Asplin '914 by suggesting Asplin does "not teach or suggest supplying a sand shutoff valve that may be adjusted to as to control the flow of sand to the mixing chamber".

However, Asplin '914 undeniably states "This dry sand storage chamber is further supplied with a valve at its lower portion. This valve provides a means of removing the dry sand as needed". See Col. 2, lns. 27-36.
Asplin '914 goes on to disclose "the dry sand removal valve 46 which allows for the removal of the dry sand from the dry sand tank 22 either by gravity or by use of an externally mounted vacuum". Clearly suggests the use of a sand shut-off valve and a "venturi" type compressed air vacuum system to remove the sand from the storage hopper 22.

Appellant then argues against claims 25-29 by repeating previous arguments that the prior art does not "introduce a pressurized media to lift the slab and does not introduce a dried material different from the pressurized media into the cavity to partially fill the cavity".

As put forth above, the implied limitation should not be construed to suggest the pressurized media is applied differently or separately from the sand. Appellant's Specification makes it clear the sand is mixed with compressed air and injected together to raise the slab and fill the cavity formed by the raised slab.

Further, Flock discloses raising sunken concrete by pressurized injection of "earth, clay, etc…any substance that can be forced under pressure and become substantially incompressible should be found satisfactory".

Further, Asplin '914(Appellant's other prior patent) explicitly recites "Dry sand is a frequent requirement in various aspects of the construction industry…A second use for dry sand is the use of sand blasters wherein dry sand is mixed with air at high pressure and used for a variety of situations". See Col. 1, lns. 5-15.

Hence, since Flock discloses raising sunken concrete with "earth, clay, etc." under pressure, and Asplin teaches dry sand is a frequent requirement in various aspects of the construction industry, including in the use of sand blasters; wherein the sand is passed through a sand removal valve (46) by an externally mounted vacuum, it appears one of skill in the art would find the method of raising sunken pavement, as claimed, obvious to the teachings of Flock in view of Asplin '914. Since, Flock teaches the method steps to be performed, and Asplin teaches the necessary structure to supply dry sand, under pressure, to a sand blaster/sand gun.

On page 26 of Appellant's Brief claim 20 is argued, such that there is not teaching of

patching the holes drilled into the slab.

This feature is rejected as being obvious because the rejection asserts that such a step is mandatory to prevent pedestrians being hurt and to prevent rainwater from entering the holes and causing settling of the slab...If the slab is on private property or in areas where pedestrian traffic is not a concern, then the holes need not be patched...It is simply not true that the hole must be patched".

However, Poulter clearly teaches using a plug (5) to fill the holes in the concrete slab.

Further, Appellant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

In light of Appellant's argument the hole in the slab need not be patched, the patentable novelty of patching the hole is in question. In fact, the method step of patching the hole appears to be a matter of common sense, and not patentable at all.

With respect to claim 21, Appellant repeats the argument, from above that the prior art does not teach the use of a bleed valve.

However, Further, Appellant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections

made. Further, they do not show how the amendments avoid such references or objections. The use of a bleed valve, is not argued by Appellant to materially affect the manner in which the method is performed, and the method appears to be equally performed without the use of a bleed valve. Hence, the recitation lacks criticality.

Further, bleed valves are common safety features frequently used on many types of compressed air devices. Hence, it would be common sense for one of skill in the art, using a sand blaster, as described by Asplin '914 to incorporate a well known safety device into the system.

With respect to claim 22, Appellant argues on pages 26-27 of the brief, that none of the prior art teaches the use of a venturi chamber.

However, Appellant's other prior patent Asplin '914 clearly discloses the well dried sand, stored in the storage tank (22) can be passed through sand removal valve (46) by application of a vacuum, which is in fact the basis of the "Venturi-effect" and Venturi-based, compressed air/particulate systems.
Therefore the argument is not persuasive and the rejection is maintained.

Appellant then argues the prior art does not teach or suggest "inserting a nozzle into a hole in a manner to create an airtight seal between the nozzle and the slab…Poulter does disclose that a pump 4 can be screwed into a lining 3. However, there is no disclosure that the resulting connection creates an airtight seal".

The Examiner, dumbstruck by the argument, refers to Poulter Col. 2, lns. 74-78, lns. 95-100. It should be considered old and ridiculously well known that threaded pipe connections are air-tight, such as in garden hoses, residential natural-gas pipes etc.

Appellant then argues neither flock, Asplin '914 nor Poulter suggest "introducing the compressed air and sand mixture in a first burst underneath the slab…the burst raises the slab…and the sand…partially fills the cavity".

However, Flock discloses raising sunken concrete by pressurized injection of "earth, clay, etc…any substance that can be forced under pressure and become substantially incompressible should be found satisfactory".

Further, Asplin '914(Appellant's other prior patent) explicitly recites "Dry sand is a frequent requirement in various aspects of the construction industry…A second use for dry sand is the use of sand blasters wherein dry sand is mixed with air at high pressure and used for a variety of situations". See Col. 1, lns. 5-15.

Hence, since Flock discloses raising sunken concrete with "earth, clay, etc." under pressure, and Asplin teaches dry sand is a frequent requirement in various aspects of the construction industry, including in the use of sand blasters; wherein the sand is passed through a sand removal valve (46) by an externally mounted vacuum, it appears one of skill in the art would find the method of raising sunken pavement, as claimed, obvious to the teachings of Flock in view of Asplin '914.

Since, Flock teaches the method steps to be performed, and Asplin teaches the necessary structure to supply dry sand, under pressure, to a sand blaster/sand gun.

Appellant then argues against the rejection of claim 24 with respect to patching the holes formed in the concrete.

However, as put forth above Poulter teaches using plugs (5) to cap the holes.

Further, Appellant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

In light of Appellant's argument the hole in the slab need not be patched, the patentable novelty of patching the hole is in question. In fact, the method step of patching the hole appears to be a matter of common sense, and not patentable at all.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Raymond W. Addie/

Primary Examiner, Art Unit 3671

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